United Nations E/CN.17/2000/6/Add.1

Economic and Social Council

Distr.: General
1 February 2000

Original: English

Commission on Sustainable Development
Eighth session
24 April-5 May 2000

Integrated planning and management of land resources

Report of the Secretary-General

Addendum

Combating deforestation*

Contents

Chapter		Paragraphs	Page
I.	Highlights since the fifth session of the Commission	1–2	3
II.	Developments and trends in forest resources planning and management	3–43	3
	A. Managing the forest-agriculture interface and slowing deforestation	3–7	3
	B. Assessment and condition of forest resources	8–11	4
	C. Environmental services of forests	12–19	5
	D. Forest resources management and plantations	20–29	6
	E. Social dimensions of forestry and people's participation	30–31	8
	F. Forest products and trade	32–38	8
	G. Recent changes in policy, legislation and institutional framework	39–43	9
III.	Challenges and priorities	44–50	10
IV.	Required action and options for international cooperation	51–58	12

* The report was prepared under the coordination of the Food and Agriculture Organization for the United Nations in accordance with arrangements agreed to by the Inter-Agency Committee on Sustainable Development. It reflects extensive consultations and information exchange between United Nations agencies, interested Governments, non-governmental organizations and a range of other institutions and individuals.

00-27672 (E) 240200

A.	Implementation of UNCED decisions through national forest and land-use plans	51–52	12
B.	International cooperation in financial assistance and technology transfer	53	12
C.	Forest assessment	54–55	12
D.	Criteria and indicators of sustainable forest management	56	12
E.	Trade in forest products	57–58	13

I. Highlights since the fifth session of the Commission

1. The present report deals with selected issues related to chapter 11 of Agenda 21, as a supplement to the report on chapter 10 of Agenda 21, reviewing the land cluster. It does not provide a comprehensive review of activities in the sector or of all action agreed at the United Nations Conference on Environment and Development (UNCED) in the four programme areas of chapter 11. The report of the Intergovernmental Forum on Forests (IFF) on its fourth session and the Food and Agriculture Organization of the United Nations (FAO) publication *State of the World's Forests, 1999* provide a more detailed account of progress.

2. During the last three years, activities related to forests and forest management have been influenced in a significant way by several global processes and events, particularly by:

- The work of the Intergovernmental Forum on Forests, reported separately, and of related government-led initiatives;
- The ongoing forestry policy review conducted by the World Bank;
- The Eleventh World Forestry Congress, held at Antalya, Turkey, from 11 to 22 October 1997, with a record attendance of over 4,400 participants;
- The ministerial meeting on forestry held in conjunction with the fourteenth session of the FAO Committee on Forestry (March 1999);
- The Group of Eight Major Industrialized Countries' action programme on forests, approved at Birmingham, United Kingdom, in May 1998;
- Increasing activities related to forest conservation and sustainable use of biological diversity in the work of the Convention on Biological Diversity, as well as in various forest forums;
- Growing acceptance of the concept of national forest programmes;
- Progress in regional and eco-regional processes to establish criteria and indicators of sustainable forest management;
- The opportunities that the Kyoto Protocol of the United Nations Framework Convention on Climate Change may provide to foster forestry activities related to carbon sequestration and substitution;
- Forest fires, which caused severe impacts in many regions during the El Niño-related dry spells in 1997 and 1998;
- The Asian financial crisis, which seriously disrupted forest products trade throughout the region and affected countries in other regions that depend on or compete with Asian markets;
- The general recognition of the special needs of the large number of low forest cover countries (however defined) for forest-related goods and services, which was emphasized at a meeting of low forest cover countries held in the Islamic Republic of Iran in October 1999 and the establishment of the Teheran process.

II. Developments and trends in forest resources planning and management

A. Managing the forest-agriculture interface and slowing deforestation

3. Pending the results of the forest resources assessment 2000 (FRA2000), the latest global figures on forest cover indicate that between 1990 and 1995, the global area of forests decreased by 56.3 million hectares (ha), the result of a loss of 65.1 million ha in developing countries and an increase of 8.8 million ha in developed countries. Compared with changes in the previous decade, it appears that the rate of deforestation may be decreasing.

4. Forest cover change includes losses due to the conversion of forests to agricultural land in developing countries, as well as increases due to forest growth on abandoned agricultural land, in particular in developed countries. The many causes of forest degradation include overharvesting of industrial wood and fuelwood, overgrazing, fire and the effects of insect pests and diseases, storms and air pollution. Ice storms in Canada and the United States in 1998 affected 7 million ha in the latter country and caused resource losses valued at over $1 billion.

5. Forest fires were among the main cause of forest destruction in 1997-1998, affecting all regions and many countries, especially Brazil, Indonesia, Mexico, Central America, the Russian Federation and the United States of America. Although the exact area affected was unknown, estimates were 2 million ha in Indonesia in 1997 and further losses in 1998, together with 2 million ha each in Brazil and in the Russian Federation. While drought associated with the unusually intense El Niño weather pattern contributed to the increased number, size and duration of fires, land-use practices were clearly major causes of forest fires.

6. The fires catalysed national and international initiatives, responses and operational measures which should assist in preventing and controlling fires in the future. Resources from several countries were mobilized to fight forest fires in Indonesia. In March 1998, the United Nations Secretary-General requested the United Nations Environment Programme (UNEP) to coordinate the United Nations system response to fire outbreaks in Indonesia. UNEP/the Office for the Coordination of Humanitarian Affairs also sent a mission to assess the situation in Brazil and organized coordination meetings at Geneva. The World Health Organization (WHO) produced guidelines on health protection in forest fire emergencies and organized a meeting on that topic at Lima in August 1998. FAO organized a workshop on public policies affecting forest fires (Rome, October 1998); the recommendations of that meeting were among the topics considered by a ministerial meeting on forests held in Rome in March 1999, and the report was brought to the attention of IFF at its third session. The International Tropical Timber Organization (ITTO) published guidelines on fire management in tropical forests in 1997, dispatched missions to Indonesia and Sarawak, Malaysia, to review the causes and impact of the 1997-1998 forest fires in the region, and jointly sponsored with the Japan International Cooperation Agency the International Forest fire forum held at Jakarta in 1998. The high-level Inter-Agency Task Force on Forests (ITFF), extending its work beyond support to IFF activities, reviewed the capabilities of the United Nations system in relation to forest fire prevention and control. A joint project proposal was submitted to the United Nations Fund for International Partnerships to enhance capability to react to fire emergencies and inter-agency coordination. FAO and other agencies are supporting field initiatives for the improvement of forest fire control methodologies and use of available technologies for prevention and suppression. Special efforts have been directed to the Mediterranean region.

7. Within the IFF process, the non-governmental organizations/Costa Rica initiative on the underlying causes of deforestation and forest degradation made a thorough examination of the problem. Eight regional workshops were held in preparation for a global conference in Costa Rica in February 1999. An extensive set of recommendations was brought to the attention of IFF at its third session.

B. Assessment and condition of forest resources

8. In addition to the work conducted under FRA2000, the EROS Data Centre, FAO and the World Conservation Monitoring Centre are developing a global forest map, which will be the first globally consistent small-scale map showing forest cover distribution. The second phase of the TREES project (1996-1999) developed a prototype that can regularly produce relevant and accurate information on the state of tropical forest ecosystems. A panel of international experts has identified "hot spots" where deforestation is most active.

9. The work programme on forest biological diversity, adopted under decision IV/7 of the Conference of Parties to the Convention on Biological Diversity at its fourth meeting (Bratislava, May 1998) includes research, cooperation and development of technologies for the conservation, sustainable use and equitable sharing of benefits arising from biological diversity of all types of forests.

10. The tenth session (September 1997) and eleventh session (September 1999) of the FAO Panel of Experts on Forest Genetic Resources made recommendations regarding the conservation, management and sustainable use of genetic resources, and updated lists of priority and important tree species by eco-region. Action was taken to support the preparation of subregional and regional strategies and action plans on forest and tree genetic resources in Sahelian Africa, the Pacific Islands, and Eastern and Southern Africa. The programme has gathered data and information on the state of forest genetic resources in the world, and has developed a worldwide information system on forest

genetic resources to support decision-making for genetic resources conservation and utilization at the national, regional and international levels.

11. Ecosystem and forest conservation were addressed through initiations led by a number of Governments, including, Australia, Brazil and the United States of America. An emerging concern for policy makers was the reconciliation of conservation and sustainable rural development. Among the contributions to this issue was an FAO/UNEP technical consultation on the theme "Protected area management and sustainable rural development: how they can be reconciled" (Zimbabwe, 1999). The consultation produced important findings and recommendations regarding effective conservation measures and sustained participation and benefits to local communities.

C. Environmental services of forests

12. Recognition of the environmental services of forests has continued to grow. Attention has focused on fragile ecosystems, including mountains, drylands, wetlands, coastal areas and small islands, as well as on countries with low forest cover.

13. The progress report on chapter 13 of Agenda 21 (Sustainable mountain development), which is also before the Commission, indicates major progress in awareness and international cooperation. The role of forests in water conservation should be given more international prominence as attention turns to the critical question of scarce freshwater resources in drylands, small islands and highly populated areas.

14. The role of forests in mitigating climate change was further recognized by the adoption in 1997, under the United Nations Framework Convention on Climate Change, of the Kyoto Protocol. In establishing legally binding commitments for the reduction of emissions of greenhouse gases in industrialized countries, the Protocol refers to activities in land use, particularly forestry, which may help to meet these commitments. It could thus provide countries with incentives to invest in forestry activities that increase carbon sequestration. Workshops of the Subsidiary Body on Scientific and Technical Advice have examined forestry and land-use issues, and the secretariat of the Convention has prepared a special report on land use, land-use change and forestry for consideration by the Subsidiary Body in June 2000. This may contribute to clarifying a number of outstanding issues, possibly leading to an enhanced role for forestry activities in the application of the Kyoto Protocol and in future implementation of its clean development mechanism.

15. Based on experience in joint implementation of Costa Rica and other countries, FAO produced information and promotion publications for Asia and the Pacific and for Latin America and the Caribbean on the opportunities for the forestry sector under the Kyoto Protocol.

16. Mangrove forests play an important role protecting coastal land from adverse weather, such as hurricanes and agricultural land from the effects of salt spray. These highly productive ecosystems are also important as nursery and feeding grounds for commercial fishing. The role such forests play in maintaining the health of coral reefs by trapping run-off sediments is critical to the tourist industry in some countries, such as in the Caribbean and in the South Pacific. The 1998 FAO guidelines on integrated coastal area management and agriculture forestry and fisheries recognized the linkages between the three sectors and suggested that planning for integrated coastal area management must be coordinated between sectoral implementing agencies. ITTO is promoting the expanded collection and dissemination of data on mangrove ecosystems in the tropics through the global mangrove information system developed in collaboration with the International Society for Mangrove Ecosystems (ISME). ITTO also supported the preparation of a world mangrove atlas by ISME and the World Conservation Monitoring Centre, published in 1997.

17. Forests in small islands play an important role in watershed protection, maintaining clean water supplies, and protection of the coastal area and the marine environment. A special ministerial conference on agriculture in small island developing States, organized by FAO in March 1999, proposed a Plan of Action addressing the special concerns of agriculture, forestry and fisheries of this group of States.

18. While most dryland forests have relatively low potential for timber production, they furnish a wide range of goods (both wood and non-wood products) and services, which are vital to local populations. The significance of the variety of these goods and services has been underestimated. Recent trends include greater

emphasis on multiple use management; development of both crop- and animal-based systems of agroforestry (in Australia, China and India, for example); consolidation of participatory forest management models (e.g., in Burkina Faso, the Gambia and Mali); and support to production and marketing cooperatives for fuelwood and poles (e.g., in Burkina Faso, India, the Niger). These approaches have increasingly been institutionalized and incorporated in national legislation. Stress has been put on the importance of policy for dryland resources conservation and development, in which national action plans to implement the Climate Change Convention have helped. Participatory management of dryland resources has been strengthened in many countries. Security of land and tree tenure and access to common property resources, including silvo-pastoral resources, have been recognized as critical issues.

19. IFF, at its second session, agreed that low forest cover countries merited particular attention. The Islamic Republic of Iran, along with international organizations and donors, took the initiative of organizing at Teheran in October 1999 a meeting to examine the various problems and issues which affect such countries, at which the Teheran Declaration was adopted.

D. Forest resources management and plantations

20. There has been an unprecedented level of attention and commitment to the concept of sustainable forest management from the global to the local levels, by both governmental and non-governmental organizations. More than 150 countries are participating in regional and eco-regional processes to establish criteria and indicators of sustainable forest management. While initiatives differ in content and/or structure, they are similar in objectives and approach. They all incorporate, in some fashion, the fundamental elements of sustainable forest management: extent of forest resources, biological diversity, forest health and vitality, productive and protective functions of forests, socio-economic benefits and needs, and legal, policy and institutional framework.

21. Greater emphasis on the management of natural forests for multiple purposes and increased attention to environmental factors have led to reduced intensities of timber harvesting and changes in management practices. Logging bans or restrictions on the logging of natural forests have been announced in several countries, such as Thailand, the Philippines, Cambodia, Sri Lanka, China, New Zealand and the United States. Similarly, the Government of Brazil announced in April 1998 its intention to put 25 million ha of rain forest under protected area status.

22. Changes in silvicultural systems have been occurring in many countries, involving all types of forests. For temperate and boreal forests, the Pan-European operational level guidelines for sustainable forest management, for instance, address regeneration, choice of silvicultural systems, tending and harvesting, the use of pesticides and herbicides, protection of key biotopes, and sensitive areas and sites of specific cultural or spiritual significance, among others things. The United Kingdom Forestry Standard was prepared in 1998 in accordance with the Pan-European guidelines. Codes of best practices in forestry and forest management have been developed for virtually all regions of Canada and the United States.

23. In the tropics, there are also clear indications of gradual change towards silvicultural practices that better reflect the multiple goals of sustainable forest management. Indonesia and Nepal have developed shelterwood/ enrichment planting in dipterocarps, and Malaysia and Uganda are moving to a selective management system. Codes of practice and guidelines for environmentally friendly forest harvesting have been prepared for tropical forests. The FAO model code of forest harvesting practice has now been adapted to regional and national needs; an edition for Asia and the Pacific was prepared in 1998, and a number of countries in the region have adopted it. Increased attention is also being given to the management of secondary forests. An international FAO/Netherlands workshop was organized on the subject at Pucalpa, Peru, in June 1997, followed by a meeting at the Eleventh World Forestry Congress and the establishment of tropical secondary forest network. Research projects in secondary forests are being implemented by the Centro Agronómico Tropical de Investigatión y Enseñanza, the Centre for International Forestry Research (CIFOR) and the Centre de coopération internationale en recherche agronomique pour le développement-forêt.

24. Other related international initiatives include the commitment by ITTO member countries (accounting for 80 per cent of the tropical forests and 95 per cent of

global tropical timber trade) to have their exports of timber and tropical forest products come from sustainably managed forests by 2000. ITTO consumer countries have also made a commitment to maintain or achieve sustainable forest management by 2000. In 1994, ITTO established a fund for sustainable management of tropical producing forests, the Bali Partnership Fund, to assist producing members in making the investments necessary to enhance their capacity to implement a strategy for achieving exports of tropical timber and timber products from sustainably managed sources by 2000. The progress on the fulfilment of the year 2000 objective will be presented at the next ITTO Council meeting in Peru, in 2000. The World Bank-Worldwide Fund for Nature (WWF) Alliance recently announced a programme aiming for a target of 200 million ha of certifiable forests by 2005.

25. Promotion of sustainable forest management at the field level for a range of different benefits linked to national forest and land-use plans has gained some impetus through the concept of model and demonstration forests. The model forest concept, initially developed in Canada, aims at promoting sustainable forest management at the local level through partnerships, and at strengthening multisectoral coordination and stakeholder cooperation. An international model forest network has been established and a series of international model forest workshops have been hosted by Japan, with the technical support of FAO and the network secretariat. Model forests are currently established or under development in Canada, the United States, Mexico, Chile, Argentina, the Russian Federation, China, Myanmar, Thailand, the Philippines and Japan. Similar activities are being developed in the Central American region under the demonstration forest management areas initiative.

26. Greater emphasis on environmental protection, the conservation of biological diversity and recreation has reduced the area of natural forest available for wood supply, and has increased reliance on forest plantations as sources of wood supply in some countries. Plantations help to alleviate potential future wood shortages, but the challenge is to achieve this while maintaining biodiversity and minimizing damage to the environment and without damaging the social fabric of rural communities.

27. Varying definitions of plantation forests mean that a range of estimates for the current total global plantation area have been made. These generally fall in a range of 110-130 million ha. A recent FAO study estimated the area at 123.7 million ha, with 68.3 million ha in temperate and boreal regions and 55.4 million ha in tropical and subtropical regions. Globally, the dominant forest plantation genus is *Pinus*. More than 40 per cent of the world's forest plantations are planted with pines. This dominance largely emanates from temperate regions, where large pine estates in the United States, the Russian Federation and the southern plantation countries — Australia, New Zealand, South Africa and Chile — collectively contribute to a temperate pine plantation estate of almost 40 million ha. *Eucalyptus spp.* are the most common tropical forest plantation species, with 10 million ha planted; Brazil and India account for more than half of this area. Other major forest plantation genera include *Picea, Abies, Larix, Acacia* and *Tectona*, while the more than 6 million ha of *Cunninghamia lanceolata* planted in China may make this the single most extensively planted forest plantation species.

28. Current annual industrial round-wood supplies from plantations were estimated to be 331 million cubic metres, contributing 22.2 per cent of global industrial round-wood. A high proportion of the world's plantations has been established directly by government agencies under aid programmes or by the private sector with financial incentives. In most cases, other objectives — social, ecological or political — were the basis for the investment — rather than pure financial criteria. Annual rates of plantation establishment in tropical and subtropical countries were estimated to be slightly more than 4 million ha, of which 1.65 million ha was in the tropics and 2.36 million ha was in the subtropics. Some of this is replanting of harvested areas.

29. The long period before harvest in forestry (as compared to investment in annual crops) increases the risks of changes in demand and/or legal provisions (e.g., land tenure), as well as the risk of failure due to natural calamities, pests or diseases. This has continued to be a major disincentive to tree planting and sustainable forest management by the private sector and individuals.

E. Social dimensions of forestry and people's participation

30. Changing patterns of forest ownership, increasing support for locally based forest management and greater participation by the private sector, have influenced how forests are managed and by whom. Changes leading to increased local forest management in various countries have included:

- Many new mechanisms for devolution of forest management to communities or user groups;
- Increased recognition of the historical territorial claims of local peoples;
- Restoration of the lands of dispossessed communities and individuals.

31. There has been increasing interest in strengthening or creating collaborative management systems, including the involvement of communities, as a strategy for promoting rural development and resource conservation through empowerment and partnerships. Participatory development, that is, activities that are designed, implemented, monitored, evaluated and adjusted through collaboration between the local people who will be affected and the supporting institution, has become the preferred approach in efforts to improve well-being and livelihoods and to eradicate poverty. Emphasis is being increasingly given to the elaboration of tools for the assessment of how to involve communities in managing forests, but it has become apparent that the conservation of natural resources has not been seen by people as a priority need — food, health and education come first — hence the need for promoting forestry within an integrated approach to sustainable livelihood development.

F. Forest products and trade

32. Developed regions continue to influence heavily the production and consumption of industrial wood products. FAO has projected that demand for round-wood will increase by 1.7 per cent annually until 2010. Production of industrial round-wood is expected to continue to exceed consumption in all regions except Asia, which will continue to rely on imports. FAO completed during the period a number of key sector outlook studies: a global fibre supply model, initiated in late 1995, and a global forest products outlook study, the fifth in a series of FAO global supply and demand studies which have been produced approximately every five years since 1982. An Asia-Pacific forestry sector outlook study was also completed, and in cooperation with the European Community the sector outlook study for Africa should be completed in 2000.

33. A number of trade-related trends have continued to offer both opportunities and challenges for the future. Increasing population, greater urbanization and rising incomes have continued to result in strong growth in global consumption for most forest products, while moves towards sustainable management may reduce timber harvests from natural forests and increase the output of plantation-grown timber and non-wood forest products. These developments have started reinforcing the need for an expansion of trade and modification of structures and approaches of marketing of forest products.

34. Certification and the associated issue of labelling remain controversial subjects in forestry. Certification seeks to link trade in forest products — particularly international trade — to the sustainable management of forests, by enabling producers and consumers to recognize products made from timber coming from sustainably managed forests. Attention is mainly focused on timber and timber products but has recently expanded to include pulp and paper, with an emerging interest in the certification of non-wood forest products. A growing number of certification schemes are being assessed in developed and developing countries, and there has been increasing acceptance of the concept of certification, though not necessarily of the form or the mechanics of the process. To date, its actual impact on trade has been small and very country-specific. Western European countries, Australia and the United States have shown interest in certification, but so far Asian timber importers have not. From the producer side, major exporting countries, such as Indonesia, Malaysia, Sweden, Finland, Canada and Ghana, are moving towards development of certification schemes, partly as a means of encouraging improved forestry practices but mainly to avoid future trade difficulties or gain a market advantage.

35. The volume of certified products entering the market is relatively small due to the limited supply and the lack of demand and the fact that most of the wood harvested in the world does not enter international trade but is used domestically, and there is therefore

little evidence of a positive or negative market impact of certification. It remains unclear whether strong demand will develop in the future for certified wood, and whether it will command a premium price. A critical but unanswered question is whether certification will, as originally intended, significantly contribute to improved forest management in developing countries. Currently, it seems to be used mainly as a marketing tool to either increase market share and/or ensure continued or improved market access. Some significant recent developments concerning certification are:

- The Forest Stewardship Council has continued to expand its country coverage, and has developed a label to be placed on certified final products;
- An International Standards Organizations (ISO) forestry working group has prepared a technical report to assist forestry organizations in implementing the ISO-14001 Environmental Management System Standard;
- In Canada, ISO-based certification system has been developed by the Canadian Standards Association;
- The Netherlands and Germany have been working to develop methods for validating the certificates provided by suppliers to their markets and linking these certificates to final products in their markets;
- The American Forest and Paper Association has developed a sustainable forestry initiative. Although not a certification process, the principles and guidelines that companies commit to under the initiative may serve as a basis for future certification by an independent body.

36. Moves to liberalize trade have continued. For developing countries, declining trade restrictions have started reducing protection in their own domestic markets and have resulted in a reduction in preferential access to export markets. But while efforts to further liberalize trade are widely supported, they have also been opposed due to concerns that trade liberalization will lead to controls on the use of eco-labelling and certification.

37. Global activities, programmes and networking efforts dealing with the promotion of non-wood forest products have been an effective means for establishing collaboration and better exchange of information on such products at the national and international level, particularly to support information exchange and capacity-building through South-South communication and collaboration. Countries have increasingly shared their experiences and lessons learned in promoting the sustainable development of selected key non-wood forest products, such as medicinal plants, and have progressed towards national/regional strategy development for communication and information needs on those products.

38. Much of the wood harvested in the world each year has continued to be used for energy production. Of the estimated 3,350 million cubic metres of wood harvested in 1995, 63 per cent was used as wood-fuel, accounting for an estimated 7 per cent of the world's total energy supply. Wood-fuels remain significant sources of energy in developing countries, especially in the rural and domestic sectors, and have been attracting attention as environmentally friendly modern energy sources in developed countries. Changes in energy policies and rising environmental concerns have favoured the development of wood energy systems, and new biomass energy technologies have improved the economic feasibility of wood energy.

G. Recent changes in policy, legislation and institutional framework

39. Current trends in forest policy reform have included attempts to privatize state forest resources and public forest-based companies, to decentralize certain functions of central government administrations and to eliminate any subsidies which may have unintended negative consequences. Legal changes have reflected commitments to promote local forest management, enhance the environmental functions of forests, reinforce forest management planning and support public participation, and increase transparency in awarding forest concessions. In many countries, central forest administrations have moved away from their traditional role, and in some the normative functions of policy formulation have been separated from operational responsibilities, which increasingly have been passed to the private sector, non-governmental organizations and local groups. This deliberate shift of responsibilities away from centralized public management has occurred in three main scenarios:

- At one extreme, government has transferred significant areas of forest and public forest companies to the private sector (e.g. New Zealand and the United Kingdom), relinquishing to a great extent both normative and operational responsibilities. It has generally been production forests or forests with lower social or environmental value that have been privatized. Unprofitable and inefficient public companies have also been privatized;

- In a second scenario, government has kept the normative responsibility of deciding how forest resources should be managed but has entrusted the private sector with implementing government-designed plans, as in the case of contract logging;

- Central government has in other cases entrusted to local governments and local communities the responsibility of designing and implementing forest management strategies and plans. Some Governments (such as Ghana, Papua New Guinea, Suriname, Uganda, Zambia and Zimbabwe) have experimented with the establishment of semi-autonomous entities and private-public joint ventures.

40. Forestry administrations in Indonesia, Malaysia and Uganda have developed partnerships with the private sector and NGOs in such areas as research, extension, revenue collection and policy enforcement. Many industrialized countries have moved substantially towards privatization and decentralization, but the shift has been more gradual in developing countries, where necessary policy and legislative reform and implementation have frequently been subject to delays.

41. At the international level, the important role of national forest programmes has been recognized as the vehicle for development of the forestry sector and in monitoring and providing information on its progress and needs. FAO has organized regional workshops on the formulation and implementation of national forest programmes, with the participation of donors, NGOs and internal organizations, at Yogyakarta, Indonesia (January 1998), Dakar (April 1998), Santiago (June 1998) and Istanbul (August 1999). The outcome of a global survey on the status and progress in the implementation of national forest programmes was reported to IFF at its third session. A practitioners guide, a useful tool to assist in the review of national forest programmes in the light of IPF proposals for action, was one of the results of the six-country initiative involving Indonesia, Germany, the United Kingdom, Uganda, Finland and Honduras. FAO also organized two international courses on forestry policy formulation. Significant progress has made in the formulation of national forest programmes, some 135 countries having reported a strategic framework for sustainable development of their forestry sector. However, national forest plans were stalled in 37 countries, 21 of them in Africa.

42. Several actions have been taken to support national forest programmes in countries. For example, UNDP started in 1998 the pilot phase of its global programme on forests, supporting national forest programmes in Cameroon, Costa Rica, Guyana, Malawi and Viet Nam, with the support of several donors. The International Forestry Advisers Group held a special workshop in Lapland, Finland, in September 1999 to consider an enhanced international support system to assist countries in the implementation of national forest programmes.

43. The World Bank has been conducting a comprehensive exercise to review its forestry policy. It started with a review of the Bank's forestry lending and portfolio and with country case studies, special papers and analytical studies, and discussion of the review process and purpose in numerous forums, as well as with NGOs and a chief executive officers forum. It should conclude with a series of eight regional and a global consultation planned for the period February-April 2000.

III. Challenges and priorities

44. Some emerging challenges and priorities for sustainable forestry development are:

- Enhanced financial and technical support for the implementation of national forest programmes from national and international sources;

- Promotion of afforestation and land rehabilitation in countries with low forest cover;

- Research, testing, demonstration, and implementation of and networking on criteria and indicators of sustainable forest management operationalization at the field level;

- Policy measures and technical and institutional preparedness to prevent forest fires;
- Management and protection of fragile forest ecosystems, particularly in small islands and coastal areas;
- Conservation of forest biological diversity and protection of the rights of forest dwellers and indigenous people in tropical forests, taking into account the decisions on traditional forest-related knowledge made by the Conference of Parties to the Convention on Biological Diversity at its fourth meeting;
- Improved dialogue on certification of forests and forest products between Governments, the private sector, international organizations and NGOs, leading to an expansion of areas under sustainable forest management, particularly in the tropics.

45. One of the important challenges is to improve links between forest policy and ground-level implementation. Policy formulation needs to incorporate the experience of local forest users and managers, both traditional and non-traditional, and forest policies need to be better understood, accepted and effectively implemented at the local level.

46. The current trend of decentralization and multi-stakeholder involvement, in partnership with central forest administrations, should be encouraged, particularly for operational matters at the local level, while central administrations maintain the normative and coordinator role. Capacity-building efforts should focus on making the new institutional set-up as efficient and transparent as possible, and on the needs for training of staff from partner organizations.

47. Advantage should be taken of the opportunities offered by electronic communication technology and data processing for improved accessibility to information for planning and decision-making. Strengthening national capacities for information collection and analysis and making available to all users reliable information on forest resources and their condition, on demand and supply of wood and non-wood products, on the environmental services required from forest lands and on the stakeholders to be involved in planning and management, are some of the key elements which could contribute to an expansion of areas under sustainable forest management.

48. At the international level and based on accurate information from Governments and other sources, it is desirable to develop, in a cooperative way, a global forest information system to disseminate and make available information to all users, including those participating in the international policy dialogue on forests. The proposal for such a system was discussed and supported by an international consultation on research and information systems held at Ort-Gmunden, Austria, in September 1998, as an IFF-related initiative of the Governments of Austria and Indonesia, with the assistance of FAO, the International Union of Forestry Research Organizations and CIFOR. These international organizations have taken steps to establish the system.

49. National forest programmes still have to be formulated in most countries of the Near East and Central Asia, and have remained stagnant in many countries, particularly in Africa, mainly because of unfulfilled expectations of mobilization of financial resources from the international donor community. International financial mechanisms are a critical need. The new forest policy strategy to be agreed by the World Bank may help redress the situation of scarce financial resources dominating the forestry sector in many countries. The Global Environment Facility might wish to consider a new window to cover other forest values than biological diversity. A few countries have developed new financial mechanisms, such as PRODEFOR and PRODEPLAN in Mexico, which provide incentives for improved harvesting and processing and afforestation, respectively.

50. It is particularly urgent to provide assistance to countries with low forest cover. The Kyoto Protocol, joint implementation projects and the clean development mechanism might be instrumental in promoting large-scale afforestation and recovering wastelands, saline soils and other lands which are subject to erosion and degradation, thus contributing to the objectives of the three UNCED-related conventions.

IV. Required action and options for international cooperation

A. Implementation of UNCED decisions through national forest and land-use plans

51. There is a need for renewed political commitment to make the necessary changes, in particular for policy decisions to resolve the underlying causes of deforestation and forest degradation. Although 85 countries have benefited from external assistance for planning and implementing the programmes, there is a need for a more coordinated and sustained support from the international donor community. In particular, countries with low forest cover, most of which have not developed a strategic framework for the forestry sector, need technical and financial support.

52. The prevention of forest fires caused by human actions to convert forestlands to other uses needs to be backed by firm policy decisions within an intersectoral context in order to correct the root causes, which are mainly related to rural poverty, the need for land reform and security of tenure, and the elimination of any incentives which may have unintended negative impacts. Public awareness, participatory use planning, the establishment of protected areas and buffer zones, and the provision of incentives for forest management, agro-forestry and conservation farming can contribute to reducing forest fire hazard.

B. International cooperation in financial assistance and technology transfer

53. Progress on financial flows to reactivate the forestry sector in developing countries and economies in transition has not occurred as it was envisaged at UNCED. Although the private sector has increased investment in developing countries, there is still a need for financial mechanisms, in particular to help the public sector to introduce reforms, formulate and implement programmes and projects, and apply sustainable forest management practices in publicly managed forests. There is significant expectation from the decisions to be made by the Conference of Parties to the United Nations Framework Convention on Climate Change on the applicability of the provisions of the Kyoto Protocol for forestry activities contributing to mitigation of climate change.

C. Forest assessment

54. The FAO global forest resources assessment 2000, expected to be completed in 2000, will be the most comprehensive and complete assessment yet, consisting of:

- A global set of definitions for forest resources;
- A global set of parameters to be assessed by country, including information not only on forest cover but also on non-wood forest products, protected areas, plantations, volume and biomass, removals, ownership and fires, as well as studies on causes of forest change;
- An independent and objective survey of forest cover change based on remote sensing;
- Global maps of forest cover, ecological zones and protected areas.

55. *Institutional development and improved* communication technologies now make it possible to update forest resources assessment with better quality data. Technological improvements still have to be coupled with technical and financial support to many countries to execute their national forest inventories.

D. Criteria and indicators of sustainable forest management

56. There is a need to enhance the implementation of criteria and indicators for sustainable forest management, including putting into practice in the field the concept of sustainable forest management as described by the criteria. There is a need for continuation of trials to determine what key indicators should be assessed, and how they can be reliably measured, to evaluate forest management. Clarification is still required of the degree to which there are linkages between criteria and indicators at the national and management-unit levels and between the latter and certification.

E. Trade in forest products

57. There are still many uncertainties and unresolved issues concerning certification and the labelling of forests and forest products. For example, there are concerns that certification, intentionally or unintentionally, may act as a non-tariff barrier to trade which discriminates against those countries unable or unwilling to join. Further analysis is desirable on all aspects of the process (from forest to marketplace), including the evaluation of certification schemes that have been in place for a period of time and of the potential benefits and limitations of certification. Greater clarity is needed on what impacts may result, including those on trade.

58. Other matters, which need further attention are the development of effective and accurate procedures for tracking wood from the forest to the market (i. e., chain of custody); how to accommodate processors who use material from many small suppliers, materials from various sources which are combined in the manufacturing process, or waste, recycled or reused material; and how to accommodate the special interests and circumstances of small forest owners. It is also necessary to encourage stronger linkages among the certification schemes that are being developed and, where possible, the mutual recognition of alternative schemes in order to limit conflicts, thus fostering international and regional agreement on sound approaches to sustainable forestry.